

## AMENDMENTS TO THE DRAWING

Replacement drawing sheets with FIGURES 1, 11, and 14 are attached herewith. FIGURE 1 on sheet 1 has been amended to include the label "Prior Art" as requested in Paragraph 2 of the Office Action. Reference numeral 726 has been added to FIGURE 14 shown on sheet 12, as requested in Paragraph 3 of the Office Action. Reference numerals 521 and 541 have been removed from FIGURE 11 on sheet 10, and reference numeral 734 has been removed from FIGURE 14 on sheet 12, since these reference numerals are not referred to in the specification as noted in Paragraph 4 of the Office Action.

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## REMARKS

Applicants respectfully request that the above-identified application be re-examined.

### Interview Summary

In response to the Examiner's Interview Summary appended to the substitute Office Action mailed October 21, 2009 ("Office Action"), applicants herewith confirm that the Examiner's remarks concerning the substance of the telephone interview held on October 14, 2009, are accurate.

### Remarks in Response to the Office Action

The Office Action objected to the specification and drawings of the above-identified application. In addition, Claims 16 and 5, 8-12, 15, 19, and 21-25 were objected to due to certain informalities. Claims 1-25 were rejected under 35 U.S.C. § 112, second paragraph, on various grounds. Finally, Claims 1, 4-12, 15-17, and 21-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable in view of the teachings of U.S. Patent No. 5,913,356 ("Muramatsu") taken in view of the teachings of U.S. Patent No. 3,006,043 ("Goldhamer"). Claims 2 and 3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Muramatsu in view of Goldhamer and further in view of DE 195 00 005 A1 ("Seefeldt"). Claims 13 and 14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Muramatsu in view of Goldhamer and further in view of JP 61-38769. Finally, Claim 18-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Muramatsu in view of Goldhamer and further in view of U.S. Patent No. 6,425,433 ("Hayes"). This amendment amends Claims 1, 5,6, 8-12, 15-18, and 21-25 and adds new Claim 26.

Turning first to the objections to the drawings and the specification, the drawing objections were set forth in Paragraphs 2, 3, and 4 of the Office Action. In response, attached are copies of sheets 1, 10, and 12, marked "Replacement Pages." FIGURE 1 (sheet 1) has been

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amended to include the label "Prior Art" as requested in Paragraph 2 of the Office Action. Reference numeral 726 has been added to FIGURE 14 (sheet 12) as requested in Paragraph 3. Reference numerals 521 and 541 have been removed from FIGURE 11 (sheet 10), and reference numeral 734 has been removed from FIGURE 14 (sheet 12), since these reference numerals are not referred to in the specification as noted in Paragraph 4. Applicants respectfully submit that the substitute pages address the drawing issues raised in Paragraphs 2, 3, and 4 and request that these sheets be entered. If the Examiner has any further questions regarding the drawings, he is invited to contact applicants' undersigned attorney at the number set forth below.

Regarding the specification objection (Paragraph 5 of the Office Action), a substitute abstract on a separate sheet is attached hereto. Applicants respectfully submit that the abstract as amended changing the word "comprising" to "including" clearly complies with the abstract requirements of the U.S. Patent and Trademark Office.

Regarding Paragraph 6 of the Office Action, applicants assume that the specification attached to the undersigned attorney's e-mail sent to the Examiner on October 14, 2009, meets the requirement for a substitute specification. If this assumption is incorrect, applicants respectfully request that the undersigned attorney be so notified so that a new substitute specification can be submitted.

Regarding the claim objections set forth in Paragraphs 7 and 8 of the Office Action, Claim 16 (Paragraph 7) has been amended to recite that the apparatus for forming a solid product from a molten assembly comprises a cavity in which the product is formed in combination with the vent assembly of Claim 1. Applicants respectfully submit that this amendment obviates this objection.

Regarding Claims 5, 8-12, and 15 (Paragraph 8), "venting" has been changed to "vent" before "assembly."

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Regarding Claim 19, rather than changing "taper" to "tapered," "tapered" has been changed to "taper" in Claim 18. The word "taper" is first introduced into this claim string in Claim 18, not Claim 17, as stated in the Office Action.

Regarding Claims 21-24, the dependency of Claims 21-23 has been changed from Claim 16 to Claim 17, as suggested in Paragraph 8 of the Office Action. Claim 24 is intended to be dependent upon Claim 1. As suggested, a comma has been added after "conduit" in the fourth line of Claim 25.

Regarding the claims rejection under 35 U.S.C. § 112 (Paragraphs 9 and 10 of the Office Action), various amendments have been made to Claims 1, 8, 17, and 25 that applicants submit obviates this ground of rejection. If the Examiner disagrees, he is invited to contact applicants' attorney at the number set forth below to discuss the basis for such disagreement.

The following remarks relate to the rejection of Claims 1, 4-12, 15-17, and 21-25 under 35 U.S.C. § 103(a) as being unpatentable over Muramatsu taken in view of Goldhamer (Paragraphs 11-13 of the Office Action).

Paragraphs 11-13 of the Office Action conclude that the subject matter of these claims would have been obvious to a person of ordinary skill in the art at the time this invention was made in view of the teachings of Muramatsu in view of Goldhamer. While applicants agree with the conclusion at page 10, Paragraph 2, of the Office Action that Muramatsu fails to disclose a distribution rail connecting to each vent section, applicants disagree with the Office Action's interpretation of Muramatsu and Goldhamer and the conclusion that the above claims are unpatentable in view of these references.

The rejected apparatus claims all require a vent chamber comprising a plurality of vent sections, a distribution rail connecting the base of each vent chamber, a pair of chill blocks

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having chill surfaces, each chill surface comprising a plurality of longitudinally adjoining chill faces, and each chill face extending the length of the vent chamber.

Furthermore, Claim 4 requires each chill face to have a corrugated surface. If each surface of the serrated surface is a chill face as required by the Office Action's interpretation of Claim 1, then the chill face surface is not corrugated as required by Claim 4.

Muramatsu discloses a pair of chill blocks with serrated chill surfaces. The chill surfaces do not show longitudinally adjoining chill faces where each chill face extends the length of the vent chamber. In Muramatsu a chill face is an angled surface on the serrated face and these chill faces do not extend the length of the vent chamber.

The Office Action indicates that Goldhamer discloses a distribution rail in the form of baffle 52 that serves as an inlet for a vent **chamber** 50, 53. Plainly, in context, a distribution rail is a hollow structure for distributing fluid. The projecting baffle 52 is not a distribution rail.

Goldhamer does not disclose any feature that could be considered a distribution rail that connects each vent section of a single venting apparatus. The purpose of the distribution rail is to provide a conduit that allows the cavity to fill first with air and then with liquid metal that subsequently solidifies. Goldhamer's baffle 52 is located at the top of the venting chamber (i.e., plays no role as a conduit to enable the cavity to fill with air and metal) and acts as part of a trap to prevent additional metal passing out of the top of the device.

Moreover, the Office Action does not take into account the claim language requiring that the distribution rail connect to each vent section rather than simply to the vent chamber.

Each rejected independent claim defines in various terms angularly oriented vent sections forming a continuous vent chamber and a distribution rail connecting to each vent section. Attention is directed to the manner in which a distribution rail defining the runner 566 illustrated in FIGURE 11 of the present specification connects to each of the vent sections that define the

panels 510, 530, and 550. The claim language is not satisfied by a structure wherein a distribution rail supplies fluid only to a first of a number of serially connected vent sections such as the various "washboard" like arrangements discussed in the background discussion in the present specification and in the various cited prior art documents.

Indeed, the prior art cited in the Office Action serves to reinforce the comments in the background discussion regarding the development of the prior art. The prior art approach includes various washboard like arrangements defining a serpentine path. None of the cited references suggest a distribution rail connecting to the base of multiple vent sections. As discussed in the present specification, these features represent an advantageous departure from the established prior art practice.

As the cited references in no way teach or suggest the claimed advantageous departure from the established prior art practice, applicants respectfully submit that the claimed invention is non-obvious.

For completeness, applicants offer the following comments in regards to Paragraphs 14-16 of the Office Action that concern dependent Claims 2, 3, 13, 14, and 18-20. In these paragraphs, the Office Action combines Muramatsu and Goldhamer with Seefeldt, JP 61-38769, and Hayes with regard to Claims 2 and 3, 13 and 14, and 18-20, respectively. Since none of these additional references teach or suggest a distribution rail in communication with multiple vent sections which define a continuous vent chamber, none of these references make up for the deficiencies of Muramatsu or Goldhamer. Thus, Claims 2, 3, 13, 14, and 18-20 are submitted to be allowable for at least the reasons that the claims from which these claims depend are allowable.

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As amended, Claim 1 encompasses vent assemblies for non-die casting applications, e.g., plastics moulding, as well as vent assemblies for die casting applications. New Claim 26 limits Claim 1 to a high pressure die casting system.

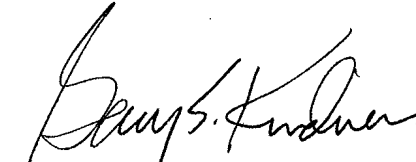
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### CONCLUSION

In summary, applicants respectfully submit that the claims, particularly as amended, are clearly allowable in view of the cited and applied references. As a result, early and favorable action allowing these claims and advancing this application to issue is respectfully solicited. If the Examiner has any further questions, he is invited to contact applicants' attorney at the number set forth below.

Respectfully submitted,

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